

2020 Public Use Microdata Areas Program (2020 PUMA)

Training Webinar
Geography Division
U.S. Census Bureau

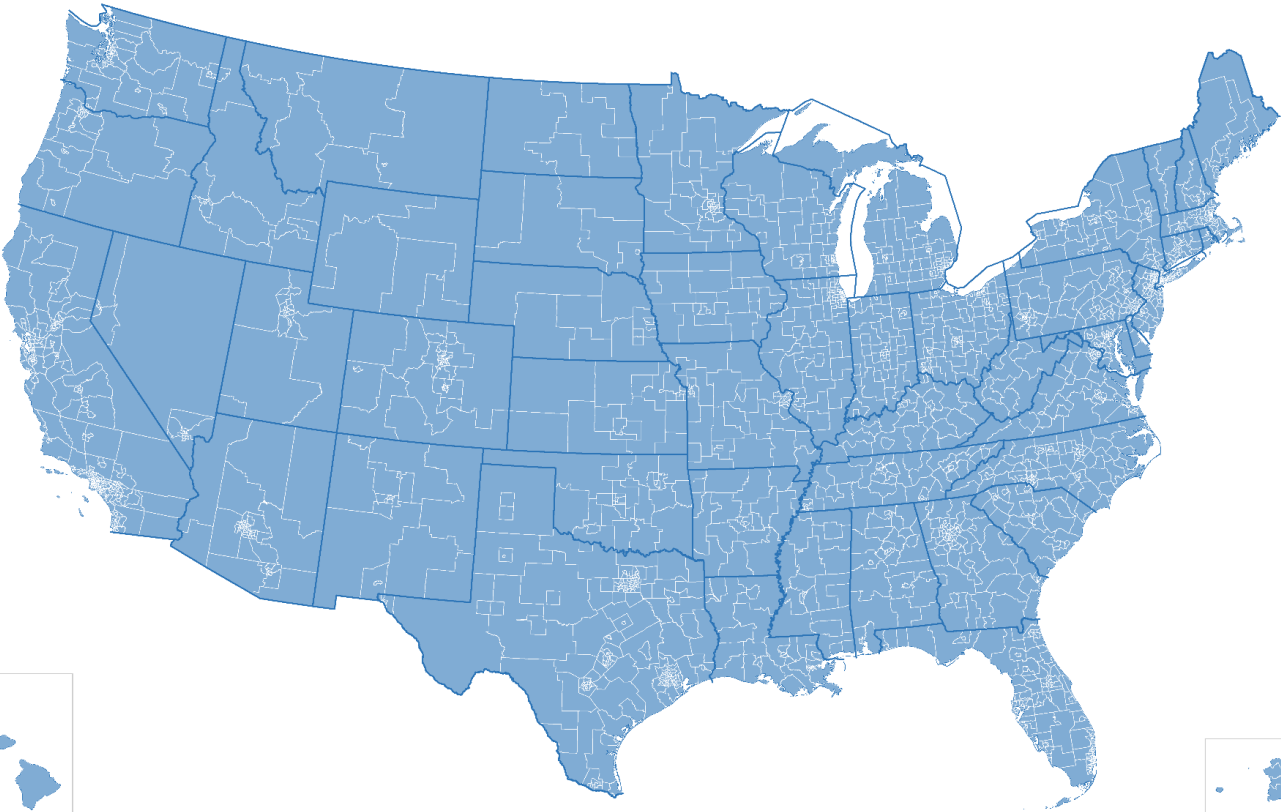
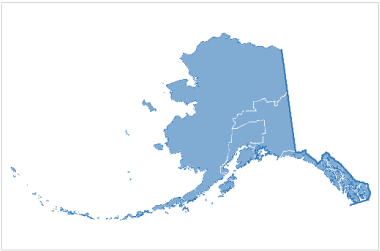
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Introduction

- Public Use Microdata Areas (PUMAs).
 - Non-overlapping, statistical geographic areas that partition each state or equivalent entity into geographic areas containing no fewer than 100,000 people each.
 - Cover the entirety of the United States, the Commonwealth of Puerto Rico, Guam, and the United States Virgin Islands.
 - Created using whole census tracts, counties (county-equivalents), or states (state-equivalents).
- 2020 Public Use Microdata Areas Program (2020 PUMA).
 - Provides State Data Centers (SDCs) the opportunity to delineate PUMAs for the next decade.

2010 PUMAs



Why we define PUMAs

- Defined for the tabulation and dissemination of decennial census and American Community Survey (ACS) Public Use Microdata Sample (PUMS) data.
- PUMS Estimates.
 - Valuable to state and local planning offices and other stakeholders for use in longitudinal research and planning.
 - Allow data users to create custom tables and statistics not available through pre-tabulated (or summary) products on census.gov.

Who Can Participate?

- State Data Centers (official participant).
 - Only SDCs can make the final submission.
 - One submission will be accepted for each state.
- Solicit Input from Others:
 - Tribal/State/Local planning offices.
 - Regional planning agencies or organizations.
 - Transportation agencies.

Final Criteria

Final Criteria for the Public Use Microdata Areas for the 2020 Census and the American Community Survey

- Population Thresholds.
- Relationships with Other Geographic Areas.
- Geographic Entities Used to Define.
- Contiguity and Noncontiguity Guidelines.
- Place of work (POW) and Migration (MIG) PUMAs.

Final Criteria – Population Thresholds

Minimum Required Population	Maximum Suggested Population
Must contain 100,000 persons or greater with the ability to maintain this population throughout the decade.	Should not contain more than 200,000 persons wherever possible, unless the PUMA is defined for an area where population decline is anticipated.

Final Criteria – Relationships with Other Geographic Areas

- Must not cross state boundaries. This criterion will be strictly enforced.
- Should comprise an area that is either entirely inside or entirely outside a core based statistical area (CBSA) where possible.
- Recommend using 2020 place definitions, 2010 urban/rural definitions, and local knowledge to inform 2020 PUMA delineations.
- Should avoid splitting Census Bureau urban areas.
- Should avoid splitting governmental minor civil divisions (MCDs).
- Should avoid splitting American Indian reservations and/or off-reservation trust lands (AIRs/ORTLs), particularly if the population is included within all parts of the split AIR/ORTL.

Final Criteria – Geographic Entities Used to Define

- Must use counties, county equivalent entities, and census tracts to delineate. This will be strictly enforced.
- A single county may be a PUMA if it meets the 100,000 minimum population threshold.
- Two or more counties may be combined to form a PUMA that meets the 100,000 minimum population threshold.
- Divide counties with more than 200,000 population using census tracts.
- Census tract-based PUMAs may cross county boundaries, provided each PUMA-county part meets a minimum population threshold of 10,000.

Final Criteria – Contiguity and Noncontiguity Guidelines

- To the greatest extent possible, each PUMA should encompass a single, geographically contiguous area.
- May be noncontiguous if the county, counties, or census tracts used to form the PUMA are noncontiguous.
- Use of noncontiguous building blocks is acceptable where it facilitates more demographically homogenous areas. However, this is not intended to create highly fragmented PUMAs.
- All noncontiguous PUMAs are subject to Census Bureau final review and approval.

Final Criteria – POW and MIGPUMAs

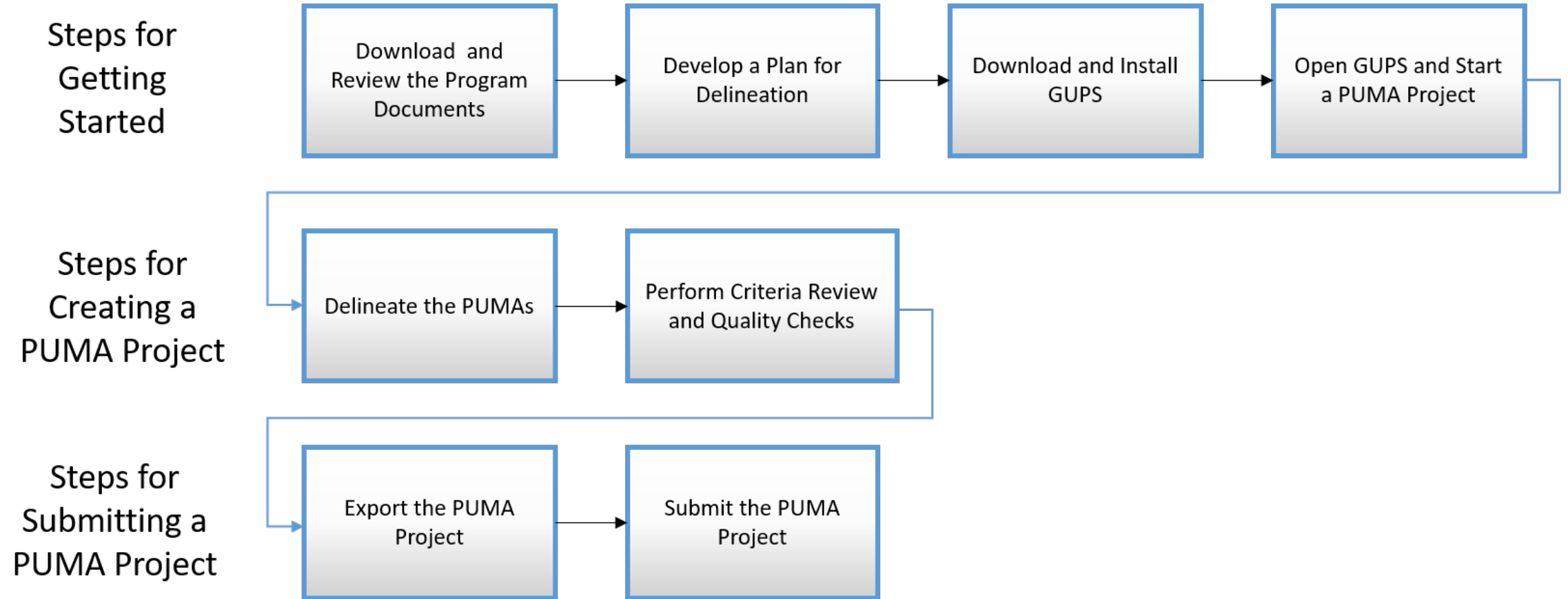
- Standard PUMAs are used to create POWPUMAs and MIGPUMAs. Therefore, carefully consider standard PUMA relationships with other geographic areas when forming the standard PUMAs.
- Can consist of a single PUMA or combination of PUMAs (county-based or census tract-based).

Getting Started

Getting Started Checklist

- ☐ Download and review the PUMA documentation from the 2020 PUMA website to understand the program and expectations for participation.
- ☐ Develop a plan and communicate.
 - ☐ With other interested data users and stakeholders.
 - ☐ Share information regarding program materials, software, and trainings with other interested data users.
 - ☐ Establish and maintain contact with other interested data users throughout the program.
 - ☐ With the Census Bureau.
- ☐ Download and install the Geographic Update Partnership Software (GUPS).

PUMA Workflow



Download and Review the Program Documents

- [2020 Public Use Microdata Areas Program \(census.gov\)](#)
 - 2020 PUMA Final Criteria.
 - 2020 PUMA Summary Guide.
 - 2020 PUMA Participant Guide.
 - 2020 PUMA Coding Guidelines.
 - 2020 PUMA Naming Guidelines.
 - 2020 PUMA Frequently Asked Questions (FAQs).
- [Public Use Microdata Areas \(census.gov\)](#)
 - Reference Information – 2010 PUMA Names File.
 - 2010 PUMA Equivalency Files.
 - 2010 Census Tract to 2020 PUMA Relationship File.
 - Tools to Learn More.

Develop a Plan for Delineation

- Consider how to conduct the work.
 - Is work performed by other interested data users or only by SDC?
- Determine the delineation manner that works for the state or situation.
- Communicate with others how they want the work completed.
- If others are involved, the SDC must import work they receive from others into their PUMA project or load it into their project for reference and review.

Geographic Update Partnership Software

- Download from the [2020 PUMA web page](#).
- Must use GUPS for 2020 PUMA.
- A self-contained, customized geographic information system (GIS) software application provided to participants by the Census Bureau for use in completing many of their geographic programs and operations.
- Allows for the sharing of work performed by multiple participants to facilitate a collaborative delineation effort and to prepare standardized output files of the delineated PUMAs for submission to the Census Bureau.

Creating a PUMA Project Live GUPS Demonstration

GUPS Demonstration

- Install/Opening GUPS.
- Map Management Window.
- GUPS Interface.
- Toolbars.
- Delineate PUMAs.
 - Create from a new blank layer.
 - Import a PUMA shapefile.
 - Import a PUMA tabular equivalency file (TEF).
- Modify or Delete a PUMA.
- Export PUMAs to Shapefile/TEF.
- Conduct Quality Checks and Criteria Review Tool.
- Export the PUMA Project.

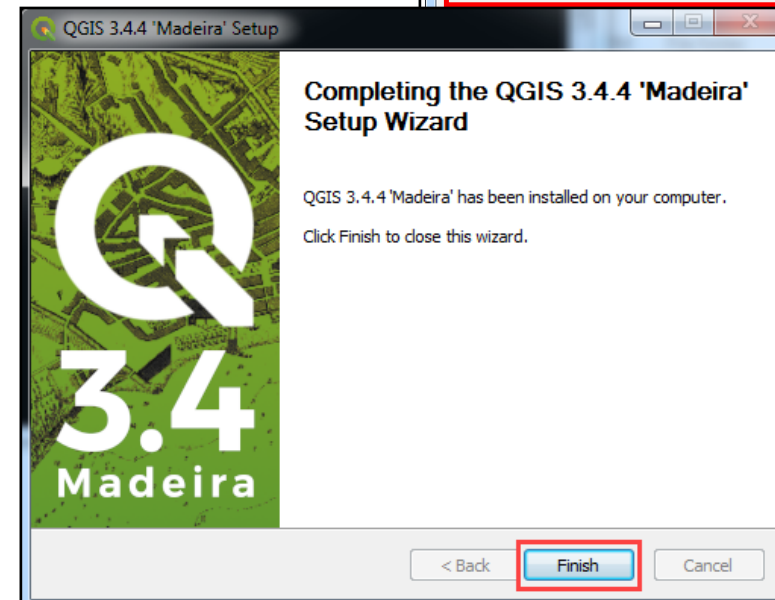
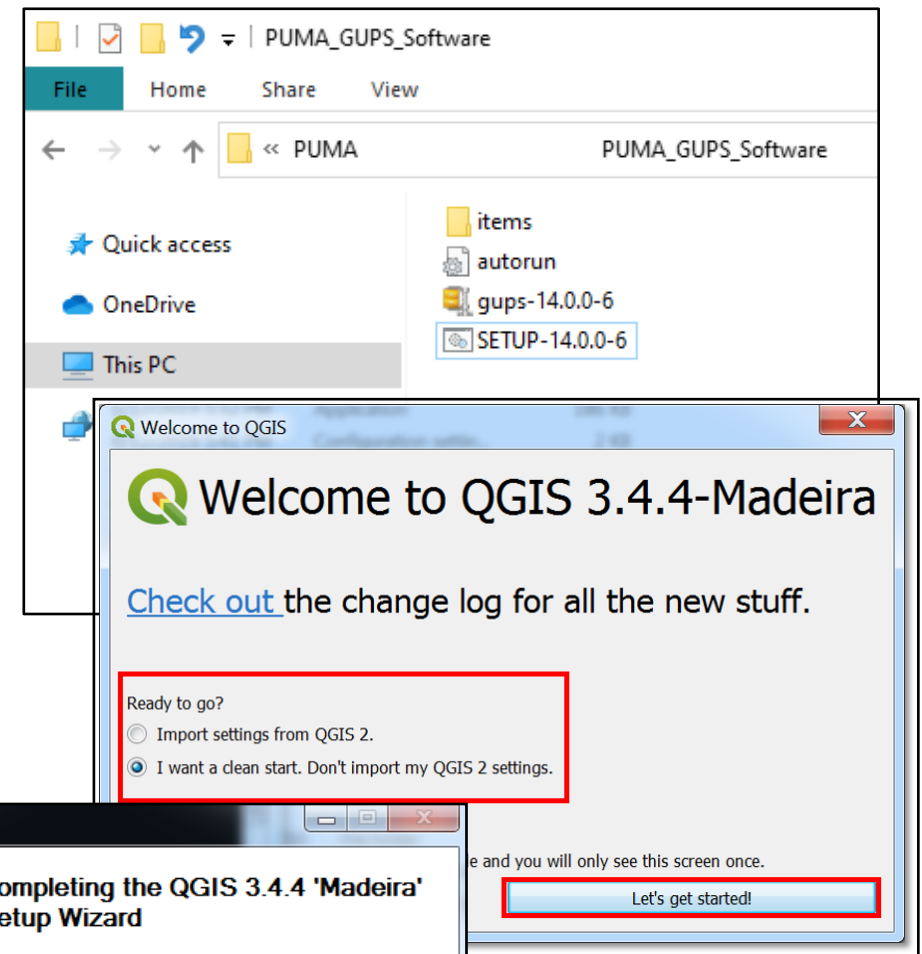
GUPS – System Requirements

- Disk space needed to run: 4GB.
- RAM: 4GB minimum.
- Operating system: Windows 8 or 10 or Mac OS X via Boot Camp.
- Administrator privileges may be required.



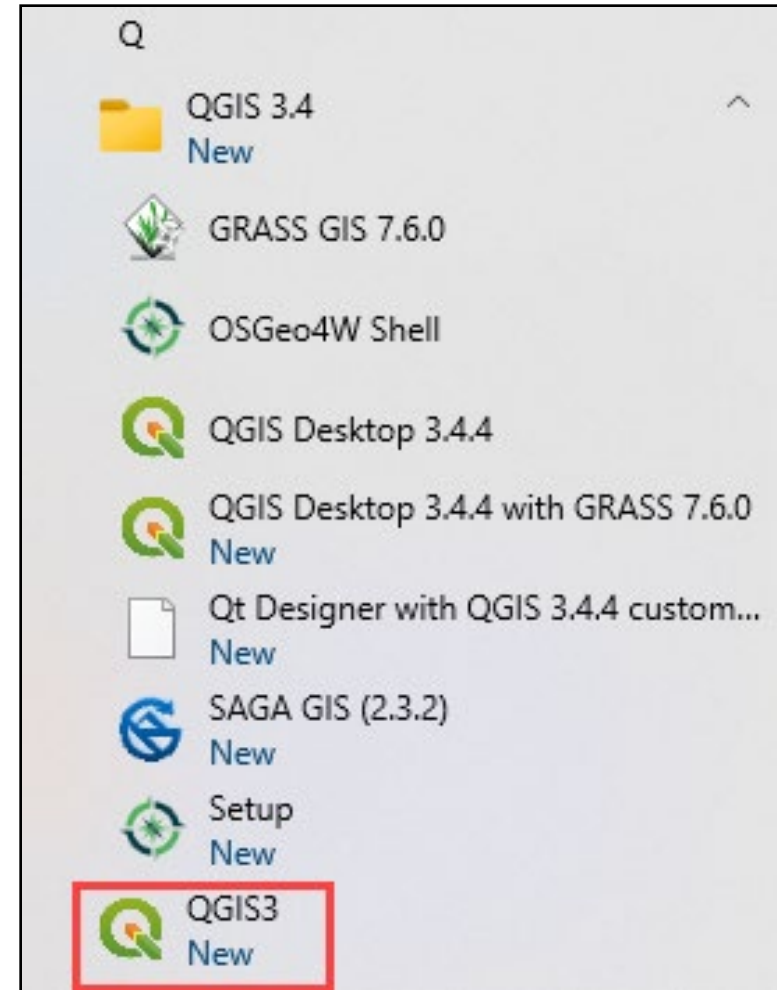
GUPS Installation

- Navigate to the local folder where the downloaded **gups.zip** file resides and unzip the file to extract the contents. When complete, it should resemble this example.
- Select the **SETUP-<version>** file and follow the instructions.

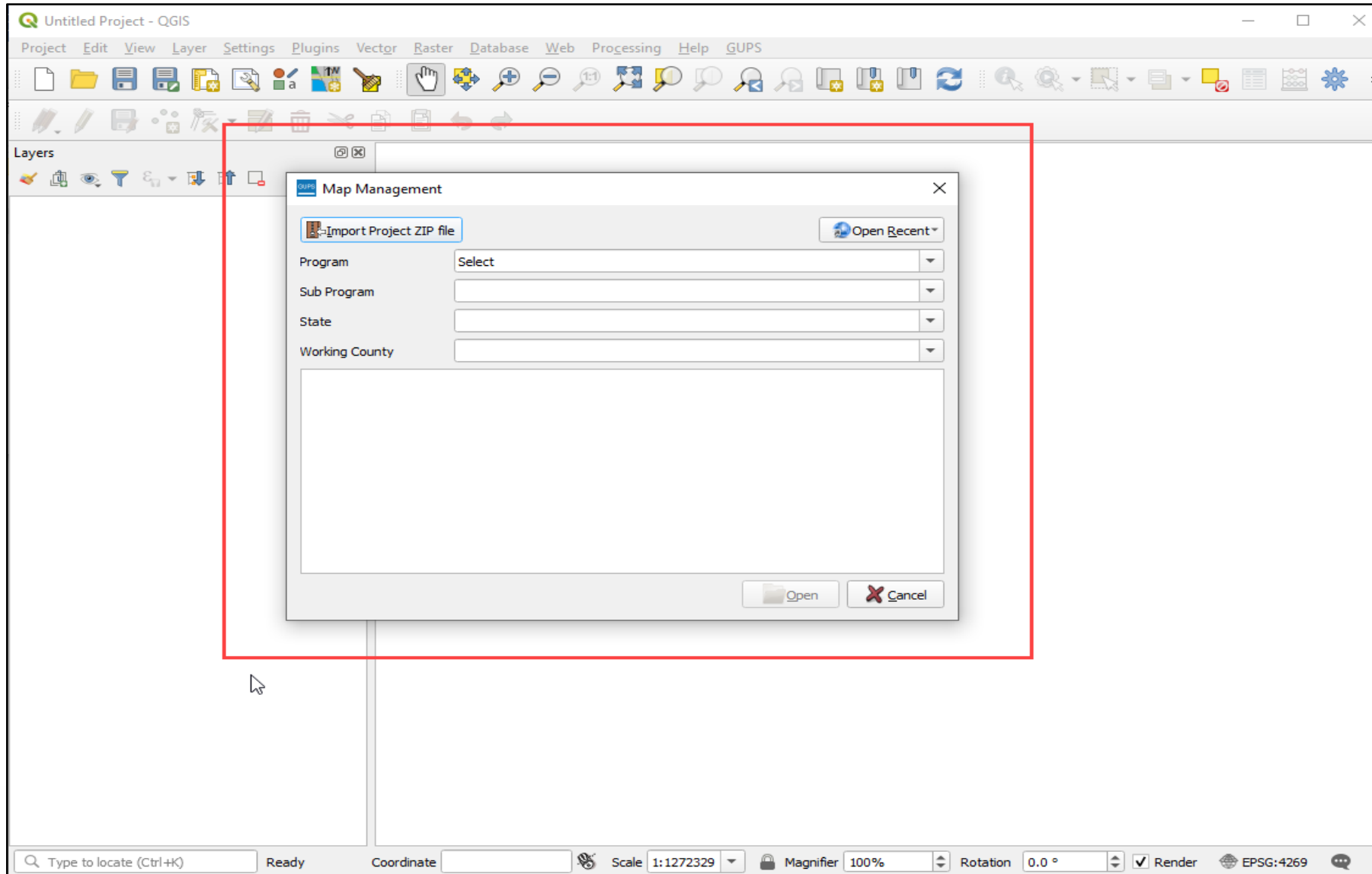


Opening GUPS

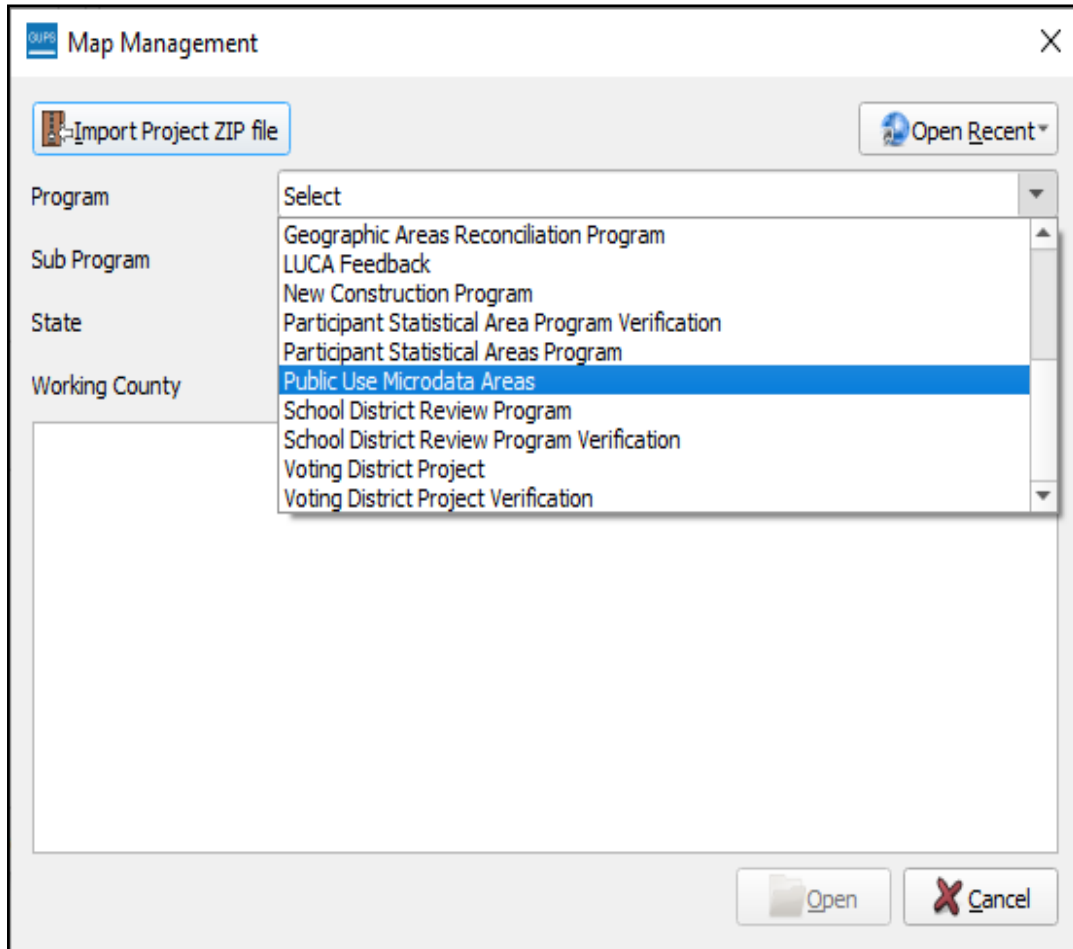
- Select the QGIS3 option from the Start Menu.



Map Management Window Appears



Map Management – Select Program and State



The 'Map Management' dialog box is shown with the 'Program' dropdown menu open. The 'Public Use Microdata Areas' option is highlighted in blue. The 'State' dropdown menu is currently set to 'Select'.

Map Management

Import Project ZIP file Open Recent

Program: Select

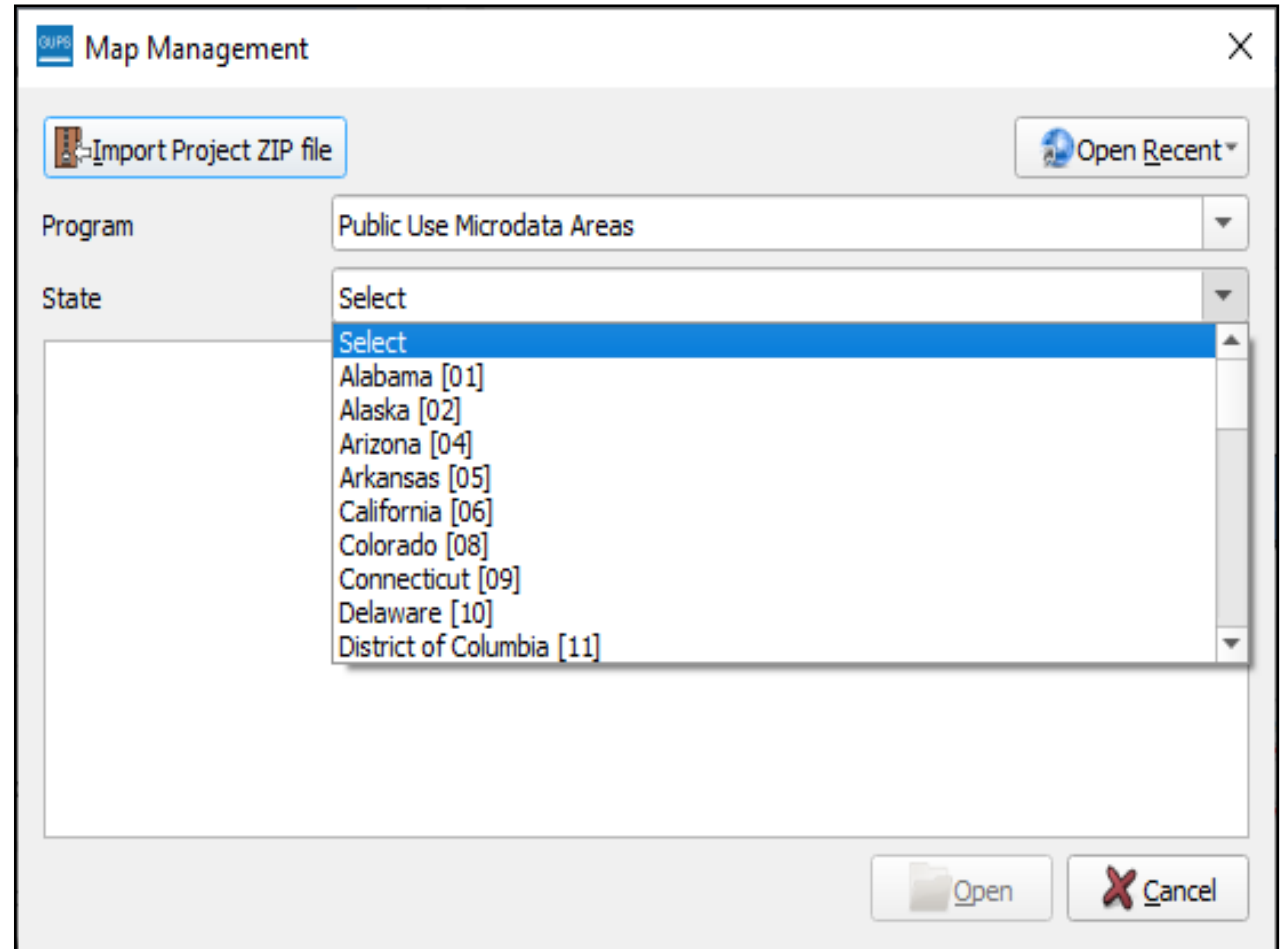
- Geographic Areas Reconciliation Program
- LUCA Feedback
- New Construction Program
- Participant Statistical Area Program Verification
- Participant Statistical Areas Program
- Public Use Microdata Areas**
- School District Review Program
- School District Review Program Verification
- Voting District Project
- Voting District Project Verification

Sub Program

State

Working County

Open Cancel



The 'Map Management' dialog box is shown with the 'State' dropdown menu open. The list of states is displayed, with 'Select' at the top. The 'Program' dropdown menu is set to 'Public Use Microdata Areas'.

Map Management

Import Project ZIP file Open Recent

Program: Public Use Microdata Areas

State: Select

- Alabama [01]
- Alaska [02]
- Arizona [04]
- Arkansas [05]
- California [06]
- Colorado [08]
- Connecticut [09]
- Delaware [10]
- District of Columbia [11]

Open Cancel

GUPS Main Page Elements and Default Layout

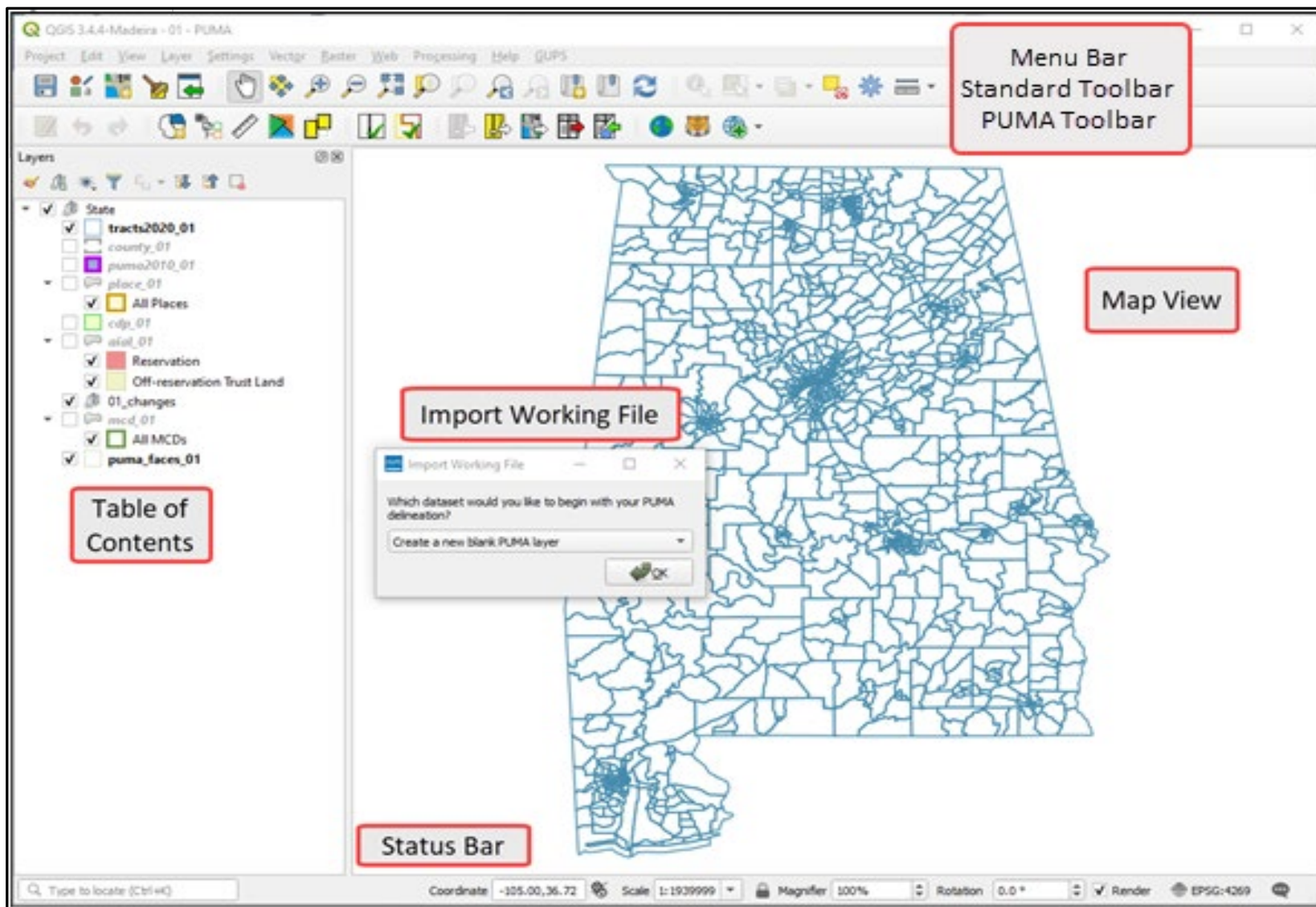


Table of Contents – Layers

pumacurrent_01

- Layer that holds 2020 PUMAs.

tracts2020_01

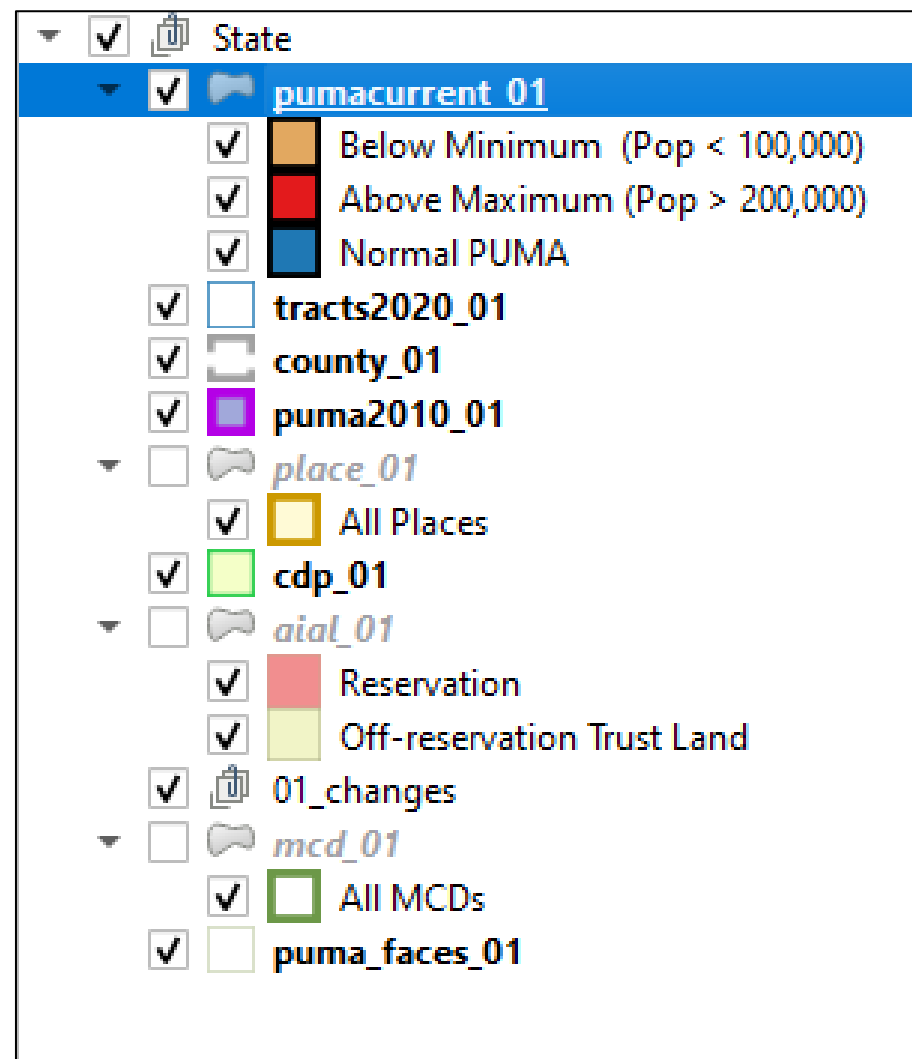
- 2020 census tracts.

county_01

- 2020 counties.

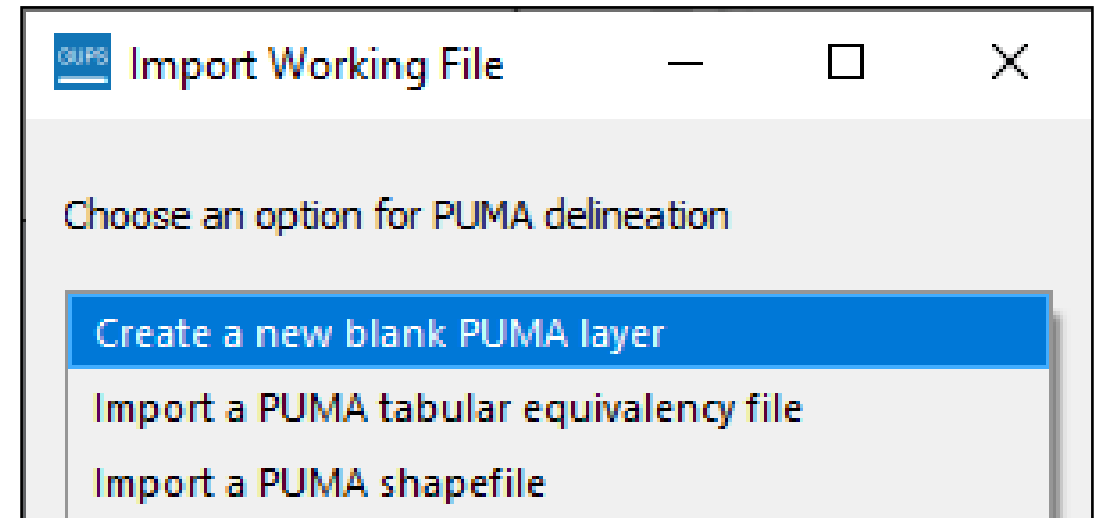
puma2010_01

- 2010 PUMAs.



Creating a PUMA Project

- There are three different options for delineating PUMAs within GUPS:
 1. Create a new blank PUMA layer.
 2. Import a PUMA tabular equivalency file.
 3. Import a PUMA shapefile.
- As PUMAs are created, they can be modified or deleted as well as exported as shapefiles or TEFs.



Conduct Quality Checks

- Confirm the name accurately reflects the delineated area and follows the naming guidelines.
- Confirm the name is relative to the geography included within the PUMA.
- For PUMAs covering more than one county or city, confirm the order of name is correct.
- Confirm the name is spelled correctly.
- Confirm the code follows the coding guidelines.
 - Is the PUMA code maintained from a previous vintage or is it new?
- Confirm the justifications provide adequate explanation for the requested exception.
 - PUMAs with justifications supplied during initial delineation will not appear as criteria failures after executing the PUMA Criteria Review tool. Therefore, it is very important to conduct a thorough quality check of each PUMA justification prior to export.

PUMA Criteria Review Tool

- GUPS checks the PUMA project to confirm the finalized criteria and guidelines are not violated.
- Generates a list of failures for review.
- Required prior to exporting for submission to the Census Bureau.

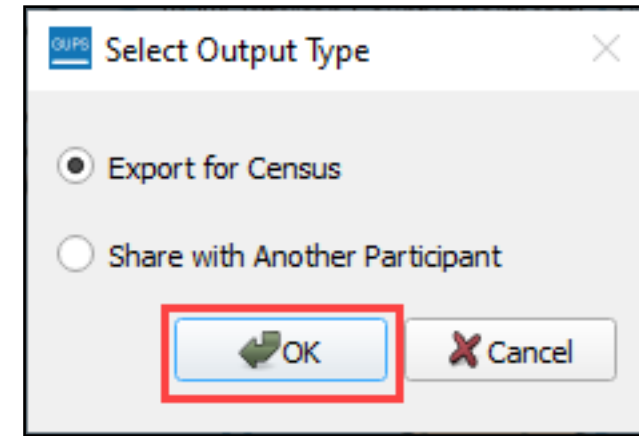
Submitting a PUMA Project Live Demonstration GUPS/SWIM

Submitting a PUMA Project

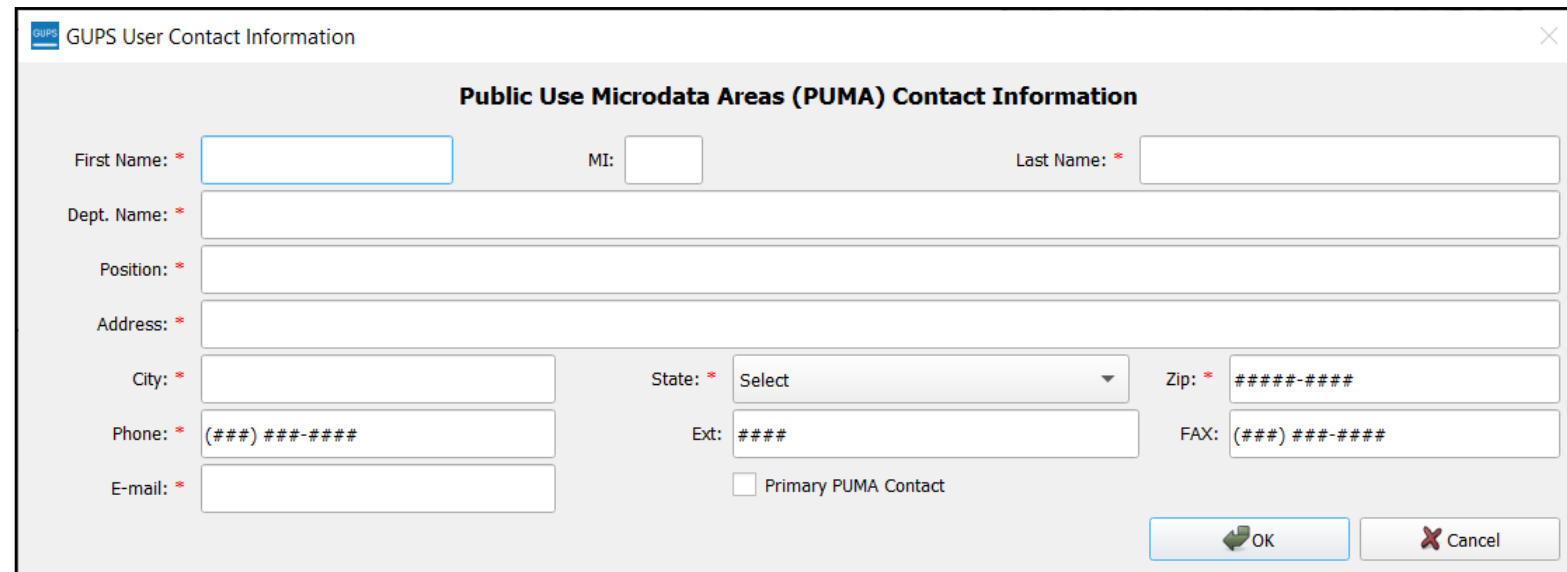
- Export the PUMA Project.
 - Export to Zip button.
- Secure Web Incoming Module (SWIM).
 - [Login | Secure Web Incoming Module \(SWIM\) \(census.gov\)](#).
 - Account registration.
 - Using SWIM to make a submission.

Exporting a PUMA Project

- Use the Export to Zip button from the PUMA toolbar to export the PUMA project for submission to the Census Bureau.



A dialog box titled "Select Output Type" with a close button (X) in the top right corner. It contains two radio button options: "Export for Census" (selected) and "Share with Another Participant". At the bottom, there are two buttons: "OK" (with a green arrow icon) and "Cancel" (with a red X icon). The "OK" button is highlighted with a red rectangular border.



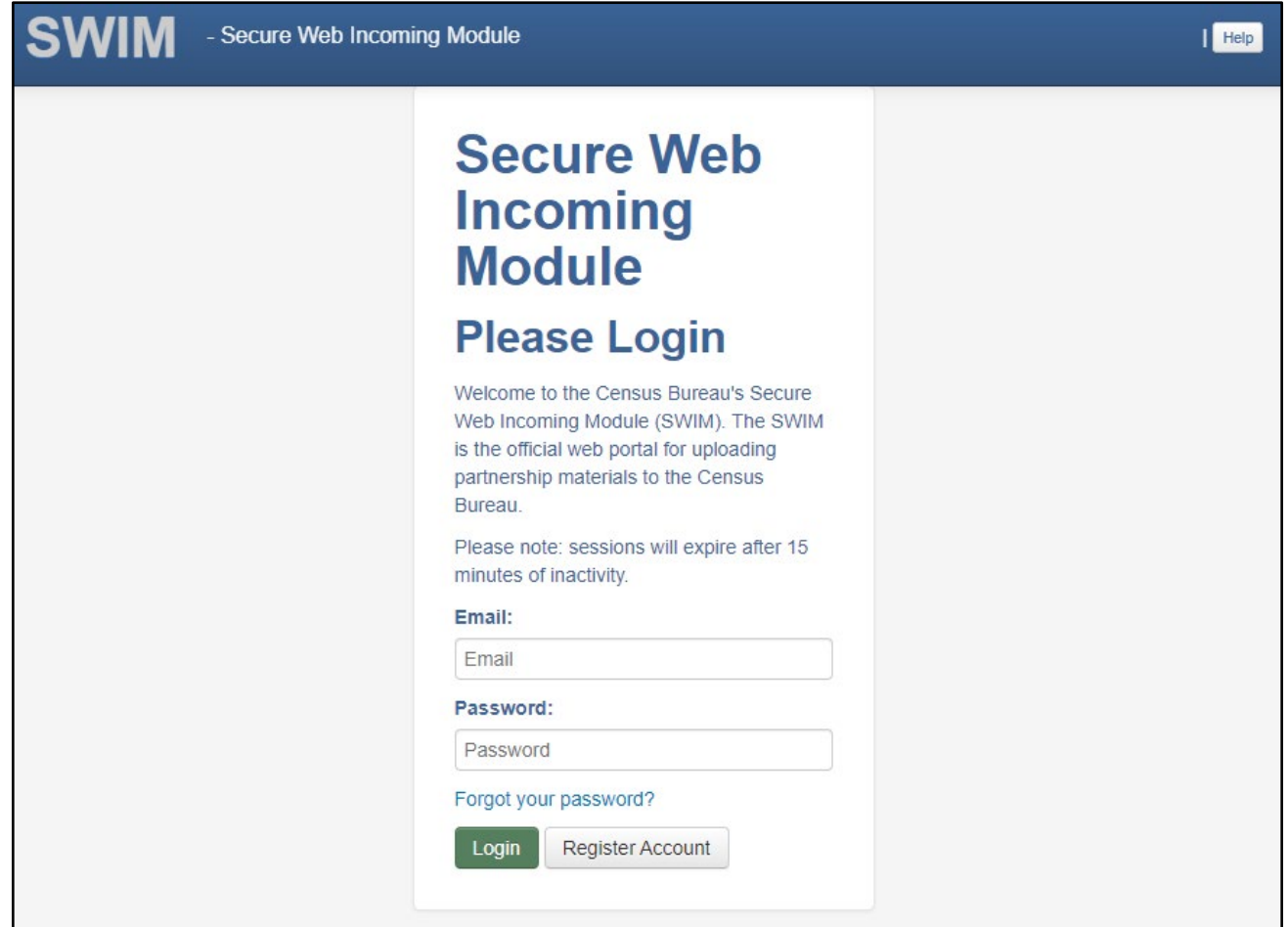
A form titled "GUPS User Contact Information" with a close button (X) in the top right corner. The form is for "Public Use Microdata Areas (PUMA) Contact Information". It contains the following fields:

- First Name: *
- MI: *
- Last Name: *
- Dept. Name: *
- Position: *
- Address: *
- City: *
- State: * (dropdown menu)
- Zip: * (format: ####-####)
- Phone: * (format: (###) ###-####)
- Ext: * (format: ####)
- FAX: * (format: (###) ###-####)
- E-mail: *
- ☐ Primary PUMA Contact

At the bottom right, there are two buttons: "OK" (with a green arrow icon) and "Cancel" (with a red X icon).

Secure Web Incoming Module

- Use of SWIM required.
- Used only by SDCs since they are primary participants.
- Username and password are case sensitive.
- Upload must be a one .ZIP file.
- 250 MB size limit.
- [Login | Secure Web Incoming Module \(SWIM\) \(census.gov\)](#).



The screenshot shows the SWIM login interface. At the top, a dark blue header contains the 'SWIM' logo and the text '- Secure Web Incoming Module', with a 'Help' link on the right. The main content area has a light gray background. On the right side, there is a white box containing the title 'Secure Web Incoming Module' and the instruction 'Please Login'. Below this, a welcome message states: 'Welcome to the Census Bureau's Secure Web Incoming Module (SWIM). The SWIM is the official web portal for uploading partnership materials to the Census Bureau.' A note follows: 'Please note: sessions will expire after 15 minutes of inactivity.' There are two input fields: 'Email:' and 'Password:'. Below the password field is a link for 'Forgot your password?'. At the bottom of the box are two buttons: a green 'Login' button and a gray 'Register Account' button.

SWIM Account Registration Screens

Secure Web Incoming Module

Please Login

Welcome to the Census Bureau's Secure Web Incoming Module (SWIM). The SWIM is the official web portal for uploading partnership materials to the Census Bureau.

Please note: sessions will expire after 15 minutes of inactivity.

Email:

Password:

[Forgot your password?](#)



Account Registration

Registration Token:

First Name:

Last Name:

Phone Number: - - #

Agency:

Email:

Confirm Email:

Password:

Confirm Password:

Security Question:

Answer:

Using SWIM to Make a Submission

SWIM - Secure Web Incoming Module Logged in as

Select a State

State:

Select

- Alabama
- Alaska
- American Samoa
- Arizona
- Arkansas
- California
- Colorado
- Commonwealth of the Northern Mariana Islands
- Connecticut
- Delaware
- District of Columbia
- Florida
- Georgia
- Guam
- Hawaii
- Idaho
- Illinois
- Indiana
- Iowa

Previous **Next**



SWIM - Secure Web Incoming Module Logged in as

Select a .zip file to upload.

File submissions must be in .zip and file size should not exceed 250 MB. Please group all metadata or supporting documentation that you have available. Please include information applicable. If you are submitting shapefiles, be sure to include all of the component files (e.g., .dbf, .shx). If you are submitting a .MXD file please be sure to include all of the separate data shapefiles, etc.). Please provide any additional information, as applicable, in the comments.

Choose File: [+ Add File](#)

Status: Success
Progress: 100%

File(s):

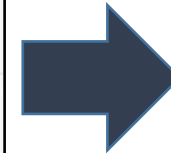
- puma20_01_return.zip

Comments:

Submission of proposed PUMAs for the state of Alabama. For questions, contact the SDC's primary contact Jon Doe and secondary contact Jane Smith.

1356 characters left

Previous **Next**



SWIM - Secure Web Incoming Module

Thank you for using SWIM.

You have successfully submitted **puma20_01_return.zip**, for **Alabama**. Bureau staff once review of your file begins.

File: puma20_01_return.zip

You may **Log Out** or return to the **upload form** to submit more files.

Questions

- Please email any questions to <geo.puma@census.gov>.
- Important web pages include:
 - [2020 Public Use Microdata Areas Program \(2020 PUMA\) \(census.gov\)](https://www.census.gov/pums/2020-puma).
 - [Public Use Microdata Areas \(PUMAs\) \(census.gov\)](https://www.census.gov/pums).
 - [Public Use Microdata Samples \(PUMS\)](https://www.census.gov/pums).
 - [Geography Program \(census.gov\)](https://www.census.gov/pums).

Thank you!